

Frankfort School District 157C

Math Curricular Expectations

Grade: 3

- Skills students should know and be able to do by the end of 3rd grade

Operations & Algebraic Thinking	Measurement & Data	Numbers & Operations of Base 10	Geometry	Numbers & Operations of Fractions
<ul style="list-style-type: none"> • Represent and solve problems involving multiplication. Interpret products of whole numbers as a certain number of groups containing a certain number of objects in each group. • Represent and solve problems involving multiplication and division to 100 to solve word problems involving equal groups. • Represent and solve problems involving multiplication and division to 100 to solve word problems using arrays. • Represent and solve problems involving multiplication and division to 100 to solve word problems involving measurement quantities. • Determine the unknown whole number in a multiplication or division equation relating three numbers (fact families). • Understand and apply the commutative property of multiplication. (No formal terms required) • Understand and apply the associative property of multiplication. (No formal terms required) • Understand and apply the distributive property of multiplication. (No formal terms required) • Multiply and divide basic facts fluently within 100. (Know from memory all products of one digit numbers by the end of grade 3) • Solve word problems involving the four operations in two step problems. • Solve word problems involving the four operations in two step problems, using a letter to represent the unknown quantity. • Assess reasonableness of the answers to two step word problems using mental math and estimation. • Solve problems by identifying and explaining patterns on the addition and multiplication tables. • Understand division as the inverse of multiplication. (Turn a division problem around into an unknown factor problem) • Represent and solve word problems involving division. Interpret whole number quotients as taking an entire group and sharing it amongst equal groups. 	<ul style="list-style-type: none"> • Tell and write time to the nearest minute and measure time intervals in minutes. • Solve word problems involving addition and subtraction of time intervals in minutes. • Draw a picture and bar graph to represent and interpret data with several categories and be able to solve one or two step problems using information represented in the graph • Understand how to find an area of plane figures and understand concepts of area and measurement. • Understand how to find an area of plane figures and understand what unit is being used to find area. (ex. cm, m, ft) • Understand concepts of area and relate to multiplication and to addition. Relate area to the operations of multiplication and addition. • Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. • Be able to find the area of rectangles and apply it to real world and mathematical problems. • Be able to take irregular shapes, split them into multiple rectangles, and find the area of each. • Recognize the perimeter of various shapes when given all sides, or missing sides. • Recognize that various shapes can have the same perimeter but different areas and vice versa. • Understand how to find and solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. • Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. • Be able to use a ruler to measure to the nearest 1/4 inch and 1/2 inch. Then apply these skills to be able to make a line plot. 	<ul style="list-style-type: none"> • Use place value understanding to add and subtract within 1000. Use place value understanding to multiply one digit whole numbers by multiples of 10 in the range of 10-90. (eg. 9x8 and 9x80) • Use place value understanding to round whole numbers to the nearest ten or one hundred • Use place value understanding to add and subtract within 1000. 	<ul style="list-style-type: none"> • Reason with shapes and their attributes. Understand that shapes in different categories may share attributes and that the shared attributes may define a larger category (example: quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals. Draw examples of quadrilaterals that do not belong to any of these subcategories • Reason with shapes and their attributes. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into four equal parts with equal area. Describe the area of each part as 1/4 of the area of the shape. 	<ul style="list-style-type: none"> • Develop understanding of fractions as numbers. Understand a fraction as the quantity formed when a whole is partitioned into equal parts. Understand a fraction as the quantity formed by the size of the parts. • Understand a fraction as a number on a number line. Represent fractions on a number line diagram. • Represent a fraction on a number line diagram by showing the interval from 0 to 1 as the whole and partitioning it into equal parts. Recognize that each part has a size and that the endpoint of the part based at zero locates the number on the number line. • Represent a fraction on a number line diagram by marking off lengths from zero. Recognize that the resulting interval has size and that its endpoint locates the number on the number line. • Develop understanding of fractions as numbers. Explain equivalence of fractions and compare fractions by reasoning about their size. • Understand two fractions as equivalent if they are the same size or the same point on a number line. • Recognize and generate simple equivalent fractions. Explain why fractions are equivalent by using a visual fraction model. • Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. • Compare two fractions with the same numerator or denominator by reasoning about their size. Recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols <, >, or =. Justify the conclusions by using a visual fraction model.